[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2017-0792; Product Identifier 2017-NE-28-AD]

RIN 2120-AA64

Airworthiness Directives; General Electric Company Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (SNPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposal for certain General Electric Company (GE) CF6-80A, CF6-80A1, CF6-80A2, CF6-80A3, CF6-80C2A1, CF6-80C2A2, CF6-80C2A3, CF6-80C2A5, CF6-80C2A5F, CF6-80C2A8, CF6-80C2B1, CF6-80C2B1F, CF6-80C2B2, CF6-80C2B2F, CF6-80C2B4, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6, CF6-80C2B6F, CF6-80C2B6FA, CF6-80C2B7F, CF6-80C2D1F, CF6-80C2L1F, and CF6-80C2K1F turbofan engines. This action revises the notice of proposed rulemaking (NPRM) by removing certain engine models and adding a new part number (P/N) to the applicability and by revising the references to the service information. We are proposing this airworthiness directive (AD) to address the unsafe condition on these products. Since these actions would impose an additional burden over those in the NPRM, we are reopening the comment period to allow the public the chance to comment on these changes.

DATES: The comment period for the NPRM published in the Federal Register on September 7, 2017 (82 FR 42261) is reopened.

We must receive comments on this SNPRM by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

• Federal eRulemaking Portal: Go to http://www.regulations.gov. Follow the instructions for submitting comments.

• Fax: 202-493-2251.

• Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

• Hand Delivery: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this SNPRM, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: aviation.fleetsupport@ge.com. You may view this service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA. For information on the availability of this material at the FAA, call 781-238-7759.

Examining the AD Docket

You may examine the AD docket on the Internet at http://www.regulations.gov by searching for and locating Docket No. FAA-2017-0792; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this SNPRM, the regulatory evaluation, any comments received, and other information. The street address for Docket Operations (phone: 800-647-5527) is listed above. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Herman Mak, Aerospace Engineer, ECO Branch, FAA, 1200 District Ave, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include "Docket No. FAA-2017-0792; Product Identifier 2017-NE-28-AD" at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this SNPRM. We will consider all comments received by the closing date and may amend this SNPRM because of those comments.

We will post all comments we receive, without change, to http://www.regulations.gov, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this SNPRM.

Discussion

We issued an NPRM to amend 14 CFR part 39 by adding an AD that would apply to GE turbofan engines, models CF6-80A, CF6-80A1, CF6-80A2, CF6-80A3, CF6-80C2A1, CF6-80C2A2, CF6-80C2A3, CF6-80C2A5, CF6-80C2A5F, CF6-80C2A8, CF6-80C2B1, CF6-80C2B1F, CF6-80C2B1F1, CF6-80C2B1F2, CF6-80C2B2, CF6-80C2B2F, CF6-80C2B3F, CF6-80C2B4, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6, CF6-80C2B6F, CF6-80C2B6FA, CF6-80C2B7F, CF6-80C2B8F, CF6-80C2D1F, CF6-80C2L1F, and CF6-80C2K1F with high-pressure turbine (HPT) disks with part numbers and serial numbers (S/Ns) listed in Table 1 and 2 of Appendix A in GE Service Bulletin (SB) CF6-80C2 S/B 72-1562, Revision 01, dated July 28, 2017. The NPRM published in

the Federal Register on September 7, 2017 (82 FR 42261). The NPRM was prompted by an uncontained failure of an HPT stage 2 disk that resulted in a fire. The NPRM proposed to require ultrasonic inspection (UI) of HPT stage 1 and 2 disks.

Actions Since the NPRM was Issued

Since we issued the NPRM, we determined the need to remove certain engine models and to add a new part number to the applicability of this AD. We determined the need to revise references to the service information in this AD because, since the publication of the NPRM, GE published the list of affected HPT S/Ns in two separate SBs applicable to the CF6-80A and CF6-80C2 engines.

Comments

We gave the public the opportunity to comment on the NPRM. The following presents the comments received on the NPRM and the FAA's response to each comment.

Request to Change Definition

MTU Maintenance Hannover, Lufthansa Technik AG, and GE requested modification of the definition of "piece part exposure." They reasoned a modification of the definition would prevent unintended inspections on disks.

We agree. Modification of the definition of "piece part exposure" will clarify the intent of when the inspections are to be accomplished. We changed the Definition paragraph in this AD to clarify that "piece-part exposure" involves separation of the HPT disk from its mating rotor parts.

Request to Clarify the Unsafe Condition

The Boeing Company (Boeing) and GE requested we add wording identifying the HPT stage 1 or HPT stage 2 disk, as appropriate, with the associated CF6-80A and CF6-80C2 engine models in the unsafe condition paragraph of this AD. These commenters requested the change to provide clarification and avoid confusion.

We agree. We changed the Unsafe Condition paragraph in this AD as requested by the commenters.

Request to Remove Engines Models from Applicability

Boeing and GE requested we modify the applicability of this AD by removing certain GE engine models. GE commented that the affected HPT disks are not certified for use in the GE CF6-80C2B8F engine model and, therefore, this model should be removed from the AD. Boeing commented that GE CF6-80C2B3F, CF6-80C2L1F and CF6-80C2K1F engine models are not part of the Boeing 767/747 type certificate data sheet (TCDS) and, therefore, these models should be removed from the AD.

In addition, we learned from discussions with GE that GE CF6-80C2B1F1 and CF6-80C2B1F2 engine models have never been produced and therefore should be removed from this AD.

We partially agree. We disagree with removing GE CF6-80C2L1F and CF6-80C2K1F engine models from applicability. These models are present on the engine TCDS. Further, the applicable HPT disks are eligible for installation on GE engine models CF6-80C2L1F and CF6-80C2K1F and these engine models may be exposed to the applicable HPT disks during an engine overhaul.

We agree with removing the GE CF6-80C2B1F1, CF6-80C2B1F2, CF6-80C2B3F, and CF6-80C2B8F engine models from the applicability section of this AD because these engine models were never produced or the applicable HPT disks in this AD are not eligible for installation in these engine models. We removed the GE CF6-80C2B1F1, CF6-80C2B1F2, CF6-80C2B3F, and CF6-80C2B8F engine models from this AD.

Revision to Part Numbers in Applicability

GE further commented that it had added HPT Stage 1 disk P/N 2047M32G06 to the Effectivity paragraph of the GE SB CF6-80C2 S/B 72-1562. This is a field rework

part number that is created from P/N 1531M84G08 and the serial number is not changed by the re-work procedure. GE noted that operators could have re-worked one or more of affected HPT disks, P/N 1531M84G08, into HPT disks, P/N 2047M32G06. Therefore, GE added this P/N to the SB.

We considered this comment and determined the need to add P/N 2047M32G06 to the applicability of this AD. We are issuing this SNPRM to allow the public the opportunity to comment on this change.

Request to Change Service Information

Boeing, Delta Air Lines, and GE requested inclusion of GE SB CF6-80A SB 72-0869 R01, dated October 19, 2017, in the applicability section of this AD.

We agree. Since the publication of the NPRM, GE has published the list of affected HPT S/Ns in two SBs applicable to the CF6-80A and CF6-80C2 engine models. We are issuing this SNPRM to allow the public the opportunity to comment on this change.

Request to Change Service Information

Delta Air Lines and GE requested an update to the latest revision of GE CF6-80C2 SB 72-1562.

We agree. We revised the reference to GE CF6-80C2 SB 72-1562 to include Revision 3, dated January 10, 2018. We are issuing this SNPRM to allow the public the opportunity to comment on this change.

Request to Change Costs of Compliance

FedEx Express requested revising the Costs of Compliance paragraph to provide a better estimate of costs associated with the HPT stage 1 and 2 disk inspections as well as to account for repetitive inspections. FedEx Express commented that the "Estimated Costs" table in the NPRM indicates 10 work-hours to perform the UI of each HPT disk. FedEx Express commented that this calculation does not appear to consider an engine

with both a Stage 1 and a Stage 2 HPT Disk affected by GE SB 72-1562. FedEx Express indicated that it has learned from GE that 10 work-hours is the expected inspection time per disk (either Stage 1 or Stage 2), not per engine. Therefore, an inspection of engines with two affected disks would require 20 work-hours per shop visit. Further, this cost estimate only takes into account the initial inspection and does not reflect that the proposed action is to be performed at every "piece-part exposure."

We disagree. Our estimate in the NPRM was based on an estimated population of 640 installed disks. Therefore, our labor estimate of 10 hours per disk and our total cost estimate remain accurate. We only account for initial inspections in our cost estimates. Repetitive inspection costs are not included. We, however, did change the Cost of Compliance section of this AD to provide better clarification.

Support for the NPRM

The National Transportation Safety Board and Air Line Pilots Association supported the NPRM.

Related Service Information under 1 CFR part 51

We reviewed GE CF6-80C2 SB 72-1562 R03, dated January 10, 2018. The SB describes procedures for UI of HPT stage 1 and 2 disks. We also reviewed GE CF6-80A SB 72-0869 R01, dated October 19, 2017. The SB describes procedures for UI of HPT stage 2 disks. This SB information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design. Certain changes described above expand the scope of

the NPRM. As a result, we have determined that it is necessary to reopen the comment period to provide additional opportunity for the public to comment on this SNPRM.

Proposed Requirements of this SNPRM

This SNPRM would require accomplishing the actions specified in the service information described previously.

Costs of Compliance

We estimate that this proposed AD affects 640 HPT disks on engines installed on airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
UI of HPT disk	10 work-hours X $85 per hour = $850	$0	$850	$544,000

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs" describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to engines, propellers, and associated appliances to the Manager, Engine and Propeller Standards Branch, Policy and Innovation Division.

Regulatory Findings

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a "significant regulatory action" under Executive Order 12866,

(2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),

(3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

General Electric Company: Docket No. FAA-2017-0792; Product Identifier 2017-NE-28-AD**.**

(a) Comments Due Date

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to General Electric Company (GE) CF6-80A, CF6-80A1, CF6-80A2, CF6-80A3, CF6-80C2A1, CF6-80C2A2, CF6-80C2A3, CF6-80C2A5, CF6-80C2A5F, CF6-80C2A8, CF6-80C2B1, CF6-80C2B1F, CF6-80C2B2, CF6-80C2B2F, CF6-80C2B4, CF6-80C2B4F, CF6-80C2B5F, CF6-80C2B6, CF6-80C2B6F, CF6-80C2B6FA, CF6-80C2B7F, CF6-80C2D1F, CF6-80C2L1F, and CF6-80C2K1F turbofan engines with high-pressure turbine (HPT) disks with serial numbers listed in Table 1 and 2 of Appendix A in GE CF6-80C2 Service Bulletin (SB) 72-1562 R03, dated January 10, 2018; and Table 1 of Appendix A in GE CF6-80A SB 72-0869 R01, dated October 19, 2017.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine/Turboprop Engine - Turbine Section.

(e) Unsafe Condition

This AD was prompted by an uncontained failure of an HPT stage 2 disk. We are issuing this AD to prevent failure of the HPT Stage 1 disk (CF6-80C2) and the HPT Stage 2 disk (CF6-80C2 and CF6-80A). The unsafe condition, if not addressed, could result in an uncontained HPT disk release, damage to the engine, and damage to the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

After the effective date of this AD, perform an ultrasonic inspection (UI) for cracks in stage 1 and stage 2 HPT disks on the CF6-80C2 engine model and in stage 2 HPT disks on the CF6-80A engine model at each piece-part level exposure in accordance with the Accomplishment Instructions, paragraph 3.A.(2), in GE CF6-80C2 SB 72-1562 R03, dated January 10, 2018, or the Accomplishment Instructions, paragraph 3.A.(2) in GE CF6-80A SB 72-0869 R01, dated October 19, 2017, as applicable to the engine model.

(h) Non-required Actions

The reporting requirements specified in the Accomplishment Instructions, paragraphs 3.A.(2)(c) and 3.A.(2)(f), of GE CF6-80C2 SB 72-1562 R03, dated January 10, 2018, are not required by this AD.

(i) Definition

For the purpose of this AD, “piece-part exposure” of the stage 1 or stage 2 HPT disk is separation of that HPT disk from its mating rotor parts within the HPT rotor module (thermal shield and HPT stage 1 and stage 2 disk respectively).

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office send it to the attention of the person identified in paragraph (j) of this AD. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(k) Related Information

(1) For more information about this AD, contact Herman Mak, Aerospace Engineer, FAA, ECO Branch, Compliance and Airworthiness Division, 1200 District Avenue, Burlington, MA 01803; phone: 781-238-7147; fax: 781-238-7199; email: herman.mak@faa.gov.

(2) For service information identified in this AD, contact General Electric Company, GE Aviation, Room 285, 1 Neumann Way, Cincinnati, OH 45215; phone: 513-552-3272; email: aviation.fleetsupport@ge.com. You may view this referenced service information at the FAA, Engine and Propeller Standards Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call 781-238-7759.

Issued in Burlington, Massachusetts, on March 23, 2018.

Robert J. Ganley,
Manager, Engine and Propeller Standards Branch,
Aircraft Certification Service.

[FR Doc. 2018-06390 Filed: 3/29/2018 8:45 am; Publication Date: 3/30/2018]